REMARKS

Claims 1-5 are pending and under consideration.

In the Office Action of January 2, 2003, Claims 1-5 were rejected, the title was objected to, and claim 5 was objected to in view of informalities.

A. Objection to Specification:

The title of the invention has been changed to be more descriptive. Applicant respectfully submits the objection has been overcome and requests, that it be withdrawn.

B. Objection to Claim 5:

The newly amended claim 5 recites "solvent" instead of "electrolyte" as per Examiner's request. Applicant respectfully submits the objection has been overcome and request that it be withdrawn.

C. § 102(e) Rejections:

Claims 1-5 are rejected under 35 U.S.C. § 102(e) as being anticipated by Negoro (US Patent No.: 6,232,021 B1), Kihira et al. (US Patent No.: 6,316,147 B1), and Dahn et al. (US Patent No.: 6,168,887 B1). Applicant respectfully traverses these rejections.

The present invention relates to a non-aqueous electrolyte cell exploiting a lithium-transition metal compound oxide as a positive electrode active material.

The present invention, as now claimed, includes a positive electrode containing a lithium-transition metal compound oxide, a negative electrode, and a non-aqueous electrolyte wherein the lithium-transition metal compound oxide is represented by the general formula Li_xMnO_2 or $Li_xMn_{1-y}Al_yO_2$ where $0.94 \leq x \leq 0.96$ and $0.06 \leq y \leq 0.25$.

Li_xMnO_2 and $Li_xMn_{1-y}Al_yO_2$ are widely used as less costly metal oxide substitute for positive electrodes. However, as set forth in the specification both compounds often undergo structural changes in the charging process (spinelling), that can lower the discharge capacity of the cells.

While the cited references may disclose use of Li_xMnO_2 or $Li_xMn_{1-y}Al_yO_2$ in only positive electrode, they all only do so in broad terms. As noted by the Examiner, x is given a range of 0.7 - 1.2 in Negro, 0.05 - 1.1 in Kihira et al and 0.5 to 1.3 in Dahn et al.

Yet as noted by Applicant, it has been determined that in a very limited range of $0.94 \leq x \leq 0.96$ produces then surprising and unexpected benefits of increased discharge capacity. This is graphed in FIG. 4.

Because the ranges of the prior art references are to broad, they clearly fail to enable one to select this narrow range or otherwise suggest the surprising results.

In the present invention, examples 1 to 3 were conducted with x being in the Applicant's range and a high capacity was achieved. (Page 18). However, when the value of x is outside of the claimed range but within the prior art ranges, the discharging capacity becomes lower due to larger content in the spinel structure. (Page 18). Neither Negoro nor Dahn et al. anticipates nor render the present invention obvious because they do not recognize the inventors or otherwise direct one to use the narrow range for x.

Again, being in a specific narrow range, the present invention has achieved the unexpected result of producing a higher discharging capacity which none of the prior art references teaches or even suggests. Accordingly, Applicant's invention is not anticipated under

35 U.S.C. § 102(e) over Negoro, Dahn et al and Kihira et al. Applicant respectfully submits these rejections have been overcome and request that they be withdrawn.

Respectfully submitted,

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